

CLAIMS

I claim:

5 1. A rail assembly for supporting a blanking tool insert on an outer frame for a lower blanking tool of a carton die cutting machine, comprising:

 an elongated insert receiving element defining a cavity for receiving a portion of the blanking tool insert therein;

 a clamp piece connectable to the outer frame and defining a vertically extending
10 inner face, an opposite vertically extending outer face, and a bore extending between the inner face and the outer face; and

 a jaw element operatively connected to the clamp piece so as to define a clamping cavity therebetween, the jaw element being movable between a clamping position for retaining a portion of the insert receiving element in the clamping cavity and a release
15 position.

 2. The rail assembly of claim 1 wherein the jaw element includes a first clamping surface engageable with the insert receiving element when the jaw element is in the clamping position.

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 3. The rail assembly of claim 2 wherein the jaw element includes a second clamping surface engageable with the clamp piece when the jaw element is the clamping position.

25 4. The rail assembly of claim 3 wherein the second clamping surface of the jaw element is generally arcuate and includes an apex.

 5. The rail assembly of claim 2 wherein the first clamping surface of the jaw element is generally arcuate and includes an apex.

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6. The rail assembly of claim 1 further comprising a screw member for moving the jaw element between the clamping and release positions.

7. The rail assembly of claim 1 wherein the bore through the clamp piece
5 extends along an axis at an acute angle to the outer face.

8. The rail assembly of claim 7 wherein the acute angle is in the range of 30° and 80°.

9. The rail assembly of claim 7 wherein the acute angle is approximately 65°.
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10. The rail assembly of claim 1 wherein the outer face of the clamp piece includes a lip, the lip engageable with a corresponding ledge along the outer frame to support the clamp piece thereon.
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11. The rail assembly of claim 1 further comprising a fastening element extending through the bore through the clamp piece and receivable in a corresponding slot in the outer frame to interconnect the clamp piece to the outer frame.

12. The rail assembly of claim 1 wherein the inner face of the clamp piece defines a recessed slot therein and wherein the rail assembly further comprises a jogger slidably disposed in the recessed slot in the inner face of the clamp piece.
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13. The rail assembly of claim 1 wherein the clamp piece includes an upper surface interconnecting the inner and outer faces, the upper surface of the clamp piece including a pin-receiving depression therein for receiving a pin extending through the blanking tool insert.
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14. A rail assembly for supporting a blanking tool insert on an outer frame for a lower blanking tool of a carton die cutting machine, comprising:

an elongated insert retaining structure for receiving a portion of the blanking tool insert;

5 a plate member defining inner and outer faces; and

a clamping structure operatively connected to the plate member and being movable between a clamping position for rigidly retaining a portion of the insert receiving structure against the plate member and a release position.

10 15. The rail assembly of claim 14 wherein the inner face of the plate member defines a recessed slot therein and wherein the rail assembly further comprises a jogger slidably disposed in the recessed slot in the inner face of the plate member.

16. The rail assembly of claim 14 wherein clamping structure includes a jaw
15 element having:

a first clamping surface engageable with the insert receiving structure with the clamping structure in the clamping position; and

a second clamping surface engageable with the plate member with the clamping structure in the clamping position.

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17. The rail assembly of claim 16 wherein the first and second clamping surfaces of the jaw element are generally arcuate and include apexes.

18. The rail assembly of claim 14 further comprising a screw member for
25 moving the clamping structure between the clamping and release positions.

19. The rail assembly of claim 14 wherein the plate member includes a bore extending between the inner face and the outer face along an axis at an acute angle to the outer face and wherein the acute angle is in the range of 30° and 80°.

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20. The rail assembly of claim 19 wherein the acute angle is approximately 65°.

21. The rail assembly of claim 14 wherein the outer face of the plate member
5 includes a lip, the lip engageable with a corresponding ledge along the outer frame to support the plate member thereon.

22. A frame assembly for a lower blanking tool of a carton die cutting machine, comprising:
a rigid outer frame having a slot therein;
a blanking tool insert receivable on the outer frame; and
5 a rail assembly for interconnecting the blanking tool insert to the outer frame, the rail assembly including:

an elongated support for receiving a portion of the blanking tool insert;

a plate member defining inner and outer faces and a bore extending between the inner face and the outer face along an axis at an acute angle to the
10 outer face;

a clamping structure operatively connected to the plate member and being movable between a clamping position for rigidly retaining a portion of the elongated support against the plate member and a release position; and

a fastening element extending through the bore in the plate member and
15 receivable in the slot in the outer frame to interconnect the plate member to the outer frame.

23. The frame assembly of claim 22 wherein the acute angle is in the range of 30° and 80°.

24. The frame assembly of claim 22 wherein the acute angle is approximately 65°.

25. The frame assembly of claim 22 wherein the inner face of the plate member defines a recessed slot therein and wherein the rail member support further comprises a jogger slidably disposed in the recessed slot in the inner face of the plate member.

26. The frame assembly of claim 25 wherein clamping structure includes a jaw element having:

5 a first clamping surface engageable with the elongated support when the clamping structure is the clamping position; and

a second clamping surface engageable with the plate member when the clamping structure is in the clamping position.

27. The frame assembly of claim 26 wherein the first and second clamping
10 surfaces of the jaw element are generally arcuate and include apexes.

28. The rail assembly of claim 22 wherein the plate member includes an upper surface interconnecting the inner and outer faces, the upper surface of the plate member including a pin-receiving depression therein for receiving a pin extending through the
15 blanking tool insert.